

the young leaves appear, they commence to feed. Last season the young larvæ of *L. disippus* appeared on the 24th of April, and on the 30th passed into the second stage, on the 7th May into the third stage, and on the 13th into the fourth stage, turned to pupæ on the 18th, and the first butterfly appeared on May 22nd. It was not until the perfect insects appeared that examples of another species were to be detected amongst them, so that the larvæ of *Limenitis ursula* and its mode of life must closely resemble those of *L. disippus*.

I have again the pleasure of exhibiting a pair of *Eudemonia argus*, from Sierra Leone, and I may here mention that, besides the usual differences in the antennæ, the male has only four spots on the hind wings, and the female has always five.

The specimens of *Rhodia fugax* emerged from cocoons deposited in the Insect-house by the Hon. Walter Rothschild, F.Z.S. The larvæ were reared, I believe, in the neighbourhood of Richmond, on willow, from ova imported from Japan. I had some ova of this species, but the young larvæ would not feed and all died. One peculiarity of this larva is, that it makes a squeaking noise when disturbed.

The specimen of *Attacus mythimna* is the second example of this beautiful species exhibited before the Society. This species was originally described and figured, P. Z. S. 1849, p. 40, pl. vii. fig. 3, as were also *Saturnia belina* and *Urota sinope*. Of these last two species males only were figured. The specimens exhibited are all females.

Of Orthoptera an example of a very curious locust, *Petasia spumans*, was brought home in December and presented to the Society by Mr. Robert Ganthony, who obtained it from Krugersdorp Falls, near Johannesburg, Transvaal. It fed upon watercress and chewed apple, but I am sorry to say did not live very long in England.

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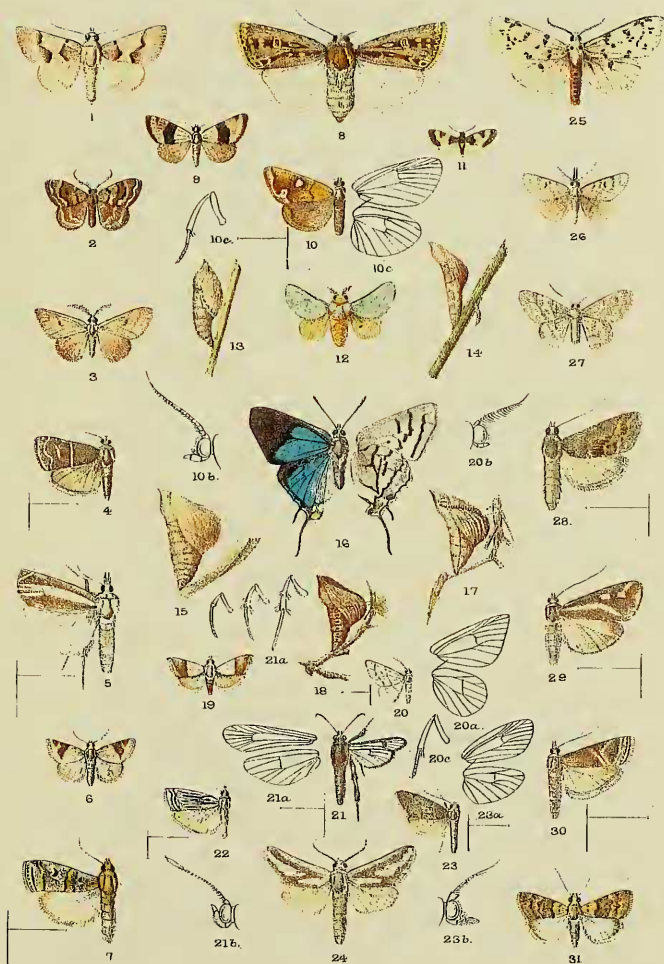
The following papers were read :—

1. On the Butterflies obtained in Arabia and Somaliland by Capt. Chas. G. Nurse and Col. J. W. Yerbury in 1894 and 1895. By ARTHUR G. BUTLER, Ph.D., Senior Assistant-Keeper of Zoology, Natural History Museum.

[Received January 29, 1896.]

(Plate X.)

Although the collections now received add only a very few species to the lists of Butterflies published in my papers on the Lepidoptera of Aden and Somaliland (P. Z. S. 1884 & 1885), they are of considerable interest, inasmuch as they contain intermediate forms between species hitherto regarded as distinct.



E.C. Knight del. et lith.

West, Newman chromo.



The general character of the Butterflies is distinctly East African, the Asiatic element being chiefly represented by species widely distributed over both Continents, or by African types allied to those found from the Persian Gulf, through Beluchistan to Karachi.

All the specimens collected by Col. Yerbury are presented to the Museum; but of those obtained by Capt. Nurse only such as are of special interest have been forwarded for examination, the types to be retained by us: he, however, adds notes on other species not recorded in the present consignment; I have therefore decided to quote these at the commencement of this paper, my personal observations being given subsequently under the species to which they refer.

The following are Capt. Nurse's notes on his collections :—

“*LIMNAS CHIRYSIPPUS*.

I have not sent any specimens of this species, but I caught and bred all four forms. Like Col. Yerbury, I could not detect the slightest difference in the larvæ, which were all found feeding on *Catotropis gigantea*.

“*MELANITIS ISMENE*.

Yerbury records this from Lahej and Aden (Journal of Bomb. Nat. Hist. Soc. 1892), but I never came across a specimen.

“*YPTHEMA ASTEROPE*.

Occurs both in Arabia and Somaliland, but I have never seen one on the Aden peninsula.

“*JUNONIA IERE*.

I only found this species at Haithallim (spelt by Col. Yerbury Haithalhlim) near Labej<sup>1</sup>.

“*JUNONIA CLELIA*.

Yerbury took one in 1883, but I never saw one.

“*JUNONIA CEBRENE*.

Common both near Aden and Zaila.

“*PYRAMEIS CARDUI*.

Common both near Aden and Zaila: I took one on Perim Island, the only Butterfly I saw there except *Catopsilia*.

“*HYPANIS CASTANEA*<sup>2</sup>.

I never saw this species near Aden, but I saw three or four in Somaliland near Zaila: Yerbury found it at Haithallim in 1883.

“*HYPOLIMNAS MISIPPUS*.

Not uncommon, but I got only one male and five females.

<sup>1</sup> Capt. Nurse says the meaning of the Arabic word is “Where the lime-trees are.”

<sup>2</sup> Capt. Nurse quotes this as *H. ilithyia*.

" *AORÆA SEIS*.

Given me by Lieut. Sparrow, 7th Dragoon Guards. Obtained when on a shooting expedition.

" *CATOCHRYSOPS CONTRACTA*.

The males do not appear to differ from specimens of the same sex which I have from Kutch, India; but the females from Kutch are much darker and have not nearly so much blue on the wings.

Mr. De Nicéville in his remarks on the genus *Catochrysops*, in the 'Butterflies of India,' says he is unable to recognize more than three distinct species. *C. contracta*, of course, may be a local race of *C. cnejus*, but the following notes may be of interest in this respect:—At Shaik Othman, near Aden, *C. contracta* is very numerous, but I never saw a *C. cnejus* there. At Lahej, 15 miles away, *C. cnejus* swarms, but I never saw *C. contracta* there. The vegetation at Shaik Othman is very scanty, while there is plenty of rank vegetation round Lahej. In Kutch I never found typical *C. cnejus*, but *C. contracta* swarms.

" *CATOCHRYSOPS ASOPUS*.

Common at Lahej.

" *POLYOMMATUS BÆTICUS*.

Common at Zaila and Aden.

" *AZANUS SIGILLATUS* (= *GAMRA* ?).

Not very common at Aden, and not seen on the Somali coast.

" *AZANUS ZENA*.

Common at and near Aden.

" *LYCENESTHES AMARAH*.

Common at and near Aden.

" *TARUCUS PULCHER* sive *PLINIUS*.

Common at Aden and Lahej.

" *TARUCUS THEOPHRASTUS*.

Common.

" *CHILADES TROCHILUS*.

Not very common.

" *ZIZERA KNYSNA* and *Z. GAIKA*.

See Col. Yerbury's remarks in Bomb. Nat. Hist. Society's Journal, 1892.

" *ZESIUS LIVIA*.

Fairly common. I bred this species from seed-pods of *Acacia*

*edgworthii*. The larva is a fat reddish one, but I did not make any careful notes regarding it.

"*IOLAUS NURSEI*.

This Butterfly was not common, and I never saw it except at Shaik Othman, where the few specimens I got were taken.

"*IOLAUS GLAUCUS*.

These were the only specimens I took.

"*TERIAS CHALCOMIÆTA*.

Common at Lahej.

"*TERACOLUS CALAIS*, var. *DYNAMENE*.

I suppose all these are *T. dynamene*. I found the larvæ on *Salvadora persica*, and I also bred some from the egg. The following is a description of the larva:—

Pea-green, very slightly rough; lower part lighter green; a slightly darker mark along back. Some of the larvæ have two black spots dotted with white behind the head, and on some the first half of the streak down the back is whitish, others have it whitish the whole length. Some of the larvæ have black heads, others green heads.

The pupa also is very variable. Some are very pale green, others yellowish brown dotted with black.

The eggs are laid in batches of 20 or 30 on the leaves of the food-plant, and the larvæ remain gregarious for at least half the larval stage. They remind one of Sawfly larvæ. I bred larvæ of all the colours mentioned above from the same batch of eggs.

"*TERACOLUS PHISADIA*. (Plate X. fig. 13.)

Common at Aden and in the interior. I found the larvæ feeding on *Salvadora persica*. The following is a description of it:—

Pea-green; when young, two black spots on back of head; a white mark, almost the shape of an ace of diamonds, but rather longer, on second segment; when older the black spots on head disappear, and the white mark gets clearer and is outlined with black. There are two similar marks just beyond the centre of the back, the front being the smaller, and another similar mark on eleventh segment.

"*TERACOLUS VI*.

I did not get many specimens of this species and I could not succeed in finding the larva, though I searched carefully many times.

"*TERACOLUS PLEIONE* (and *T. MIRIAM*). (Plate X. fig. 18.)

Very common at Aden, but, like Col. Yerbury, I never saw it elsewhere. I found plenty of the larvæ feeding on *Cadaba*

*glandulosa*, but I failed to breed it from the egg, though I tried three or four times. The young larvæ never lived more than three or four days, as I could not keep the plant moist enough for them. The following is a description of the larva:—

When young, brownish with black head; when older nearly pea-green, somewhat rough, but no hairs except tiny spines: a pale green line along centre of back; this line almost disappears as the larva becomes full-grown; two rows of small black spots along the sides, much fainter in some specimens. When full-grown about an inch long; somewhat variable in colour. The pupa is somewhat variable, being cream-coloured with dark green markings.

The larvæ are much infested with two different kinds of ichneumonids.

#### “TERACOLUS LEO.

This species was not uncommon near Zaila, but I only took this specimen, as I thought they were all of the same species as I had got at Aden.

#### “TERACOLUS HALIMEDE. (Plate X. fig. 17.)

These I call *T. acaste*, and I take them all to be of one species. I bred No. 184, and also a male, from larvæ found on *Cadaba glandulosa*. The larva is pea-green, with two small black spots on segment next behind head. It has a cream-coloured line on each side, commencing just before the centre of its length, and running along the rest of the body; just above this line is a tiny black spot on each segment. When full-grown it is rather more than an inch long.

#### “TERACOLUS EUFOMPE.

This was the commonest Butterfly near Zaila in May and June 1895, but there were very few Butterflies of any kind about. I take them to be all of one species.

#### “TERACOLUS PHILLIPSI.

Given me by Lieut. Sparrow.

#### “TERACOLUS EVAGORE<sup>1</sup>.

These all appear to me to be *T. nouna*. I cannot think that *T. saxeus* is anything but the same species.

#### “TERACOLUS COMPTUS.

Given me by Lieut. Sparrow.

#### “TERACOLUS YERBURII. (Plate X. fig. 14.)

There is probably more than one species in this series, but I find it difficult to separate them; I have therefore sent a good number

<sup>1</sup> One of the extreme types of the female (*T. jamesii*) is confounded with *T. yerburi* in Capt. Nurse's notes, being numbered 229.

of specimens. Most of them, I think, are *T. yerburii*. I bred this species from larvæ found on plant No. 4 (this plant could not be identified at B. M.) at Shaik Othman. The following is a description of the larva:—

Head orange, lateral stripes of the same colour. Ground-colour of back plumbeous, a darker stripe along centre, the whole faintly dotted with white. Below the lateral orange stripe there is a slight protuberance on each segment, black in colour with white dots. The whole larva is covered with short bristly hair.

Pupa:—ground-colour pale lilac, with a purplish stripe along centre and yellow lateral stripes.

From all the pupæ emerged typical *T. yerburii*, except from one which produced *T. noua*, much to my surprise. I did not notice that one of the larvæ was different from the others, so the larva of *T. noua* must closely resemble that described above<sup>1</sup>.

"TERACOLUS DAIRA, ♀ (for ♂, see footnote).

I have never come across this form on the Arabian side.

"TERACOLUS ANTEVIPPE.

Given me by Lieut. Sparrow.

"CATOPSILIA FLORELLA.

These I cannot properly separate. I bred some *Catopsiliæ* from larvæ found feeding on plant No. 5 (*Cassia* sp.? could not be satisfactorily identified at B. M.). The following is a description of the larva:—

Ground-colour pea-green; a black, interrupted, but very distinct lateral stripe, and below it a broader stripe of an orange-yellow colour. The larva is rough, but not hairy; the whole of the back and head are covered with minute black dots. Length, when full-grown, about  $1\frac{1}{2}$  inches.

The pupa is green.

One came out *florella* ♀; two others more like *pyrene*.

"BELENOIS MESENTINA, var. LORDAOA.

Swarms at Shaik Othman and in the desert generally. This, both in the larval and imago stages, seems to be the same as *B. mesentina*. The larvæ feed on several plants, are gregarious, hundreds being found on a single bush. They are greenish, slightly hairy; head black, dotted with white; a broad chocolato-coloured stripe on each side, faintly dotted with white. Some of them remained only five days in the pupal stage.

"BELENOIS LEUCOGYNE.

I did not find this species at all common, and only got two or three specimens.

<sup>1</sup> Starved examples of this species were separated and numbered from 252-257 with the note:—"This appears to be something different from *T. yerburii*." The males of *T. दौरا* were confounded with *T. yerburii*.—A. G. B.



"SYNCHLOE GLAUCONOME.

Common both at Aden and Zaila. The larva feeds on *Cleome paradoxa* in Aden, and inland on other plants. It is greenish yellow, dotted all over with black. Three bluish streaks along the whole length of body. No hairs. About  $1\frac{1}{4}$  inches long when full-grown.

Pupa much the same colours and markings as the larva, but both are fainter.

"HERPÆNIA ITERATA.

Given me by Lieut. Sparrow.

"NEPHERONIA ARABICA.

I only got three or four specimens.

"PAPILIO DEMOLEUS.

Given me by Lieut. Sparrow. Col. Yerbury got several specimens of a *Papilio* (*P. demoleus*, I believe) at Lahej.

"ISMENE ANCHISES.

Two specimens at Aden and one near Zaila.

"CHAPRA MATHIAS.

Common both at Aden and Zaila.

"GEGENES KARSANA.

Fairly common.

"PYRGUS ADENENSIS.

Fairly common.

I think the differences in the larvæ of such species of *Teracolus* as I have described above are worthy of attention. The larva of *T. yerburii* is not in the least like any of the other larvæ I found; but this was the only red-tipped *Teracolus* larva I got, except one of *T. nouna*, which so closely resembled *T. yerburii* that I did not observe any difference till the imago emerged. The larvæ of *T. pleione* and *T. dynamene* vary to some extent among themselves, but in the case of *T. dynamene* I bred several varieties from one batch of eggs: I got only two or three each of *T. phisadia* and *T. acaste*. All these forms bear a kind of family likeness one to another; and, to some extent, this may be said of *T. protomedia*. I do not know what *Teracolus* larvæ have been described by others; but, judging from the larvæ, *T. yerburii* and presumably the other red-tipped *Teracoli* should not belong to the same genus as the others."

C. G. NURSE.

I am afraid that genera based upon larval coloration would be very unnatural; moreover, the fact that Captain Nurse could not distinguish between the larva of the scarlet-tipped *T. yerburii* and that of the orange-tipped *T. evagore* (= *nouna*), seems to me to

quash the suggestion of generic separation at once, even had it not been shown that the same species, when taken in widely distant countries, differs so completely in larval colouring as to be unrecognizable in this stage of its existence. For example, larvæ of *Agrotis c-nigrum* in Ceylon are altogether dissimilar from European larvæ of the same species; the moths, however, are absolutely indistinguishable.

*List of the Species of Rhopalocera.*

1. LIMNAS CHRYSIPPUS.

♀. Var. *dorippus*, Klug, Symb. Phys. pl. 48. figs. 1-4 (1832).

♂. Var. *klugii*, Butler, P. Z. S. 1885, p. 758.

♀, Lahej, 28th March, 1895; ♂, Aden, 6th February, 1895 (*Col. Yerbury*).

2. YPTHEMA ASTEROPE.

*Hipparchia asterope*, Klug, Symb. Phys. pl. 29. figs. 11-14 (1832).

Shaik Othman, 10th February, and Lahej, 5th to 10th March, 1895 (*Col. Yerbury*); 14th February, 8th and 24th May, 1894; Zaila, Somaliland, 28th May and 4th June, 1895 (*Capt. Nurse*).

3. JUNONIA HERE.

*Junonia here*, Lang, Entomologist, p. 206 (1884).

♂, Lahej, 26th May, 1894 (*Capt. Nurse*); ♀, 14th March, 1895 (*Col. Yerbury*).

4. HYPOLIMNAS MISIPPUS.

*Papilio misippus*, Linnæus, Mus. Lud. Ulr. p. 264 (1764).

Typical female (resembling *Limnas chrysippus*).

Aden, 12th October (*Capt. Nurse*).

Var. *alcippoides* (resembling *L. alcippoides*).

Aden, 27th February, 1895 (*Col. Yerbury and Capt. Nurse*).

Var. with white on secondaries (resembling *L. dorippus*).

Aden, 28th February (*Col. Yerbury*).

Var. between typical *H. misippus*, ♀, and var. *inaria*.

Shaik Othman, 7th April; Zaila, Somaliland, 23rd May, 1895 (*Capt. Nurse*).

Var. *inaria* (resembling *L. klugii*).

Aden, 24th September, 1894 (*Capt. Nurse*).

The whole of the known variations of the female of this species are therefore represented in these two small collections, all the forms having been taken either at or near to Aden.

5. BYBLIA ACHELOIA, var. CASTANEA.

*Hypanis castanea*, Butler, P. Z. S. 1885, p. 759.

Somaliland (*Capt. Nurse*).

6. *ACRÆA SEIS*.

*Acræa seis*, Feisthamel, Ann. Soc. Ent. France, 1850, p. 247.

Somaliland (*Capt. Nurse*).

In Mr. Kirby's Catalogue this species was erroneously recorded as a variety of *A. mahela*; consequently it has since been described by Mr. Grose Smith as *A. matuapa*, by Messrs. Godman and Salvin as *A. calyce*, and by Viellot as *A. mhondana*; it is distributed over Africa from West to East, and we have one example labelled South; the ground-colour varies from almost wholly tawny (probably rose-red in life) to an insect having the primaries almost entirely smoky brown. *A. seis* is the African representative of the Asiatic *A. violæ*, which it nearly resembles both in form and pattern.

7. *CATOCHRYSOPS CONTRACTA*.

*Lampides contracta*, Butler, P. Z. S. 1880, p. 406, pl. xxxix. fig. 3.

♂ ♀, Shaik Othman, 3rd March (*Col. Yerbury*), 21st April, 1895 (*Capt. Nurse*).

These Arabian examples do not differ at all from those obtained at Candahar, Beloochistan, and Karachi.

8. *AZANUS GAMRA*.

*Lyccæna gamra*, Lederer, Verh. zool.-bot. Ges. Wien, 1855, p. 189, pl. i. fig. 3.

♂ ♀, Shaik Othman, 24th February, 3rd March; Aden, 7th and 18th March, 1895 (*Col. Yerbury*).

I think it probable that this may be the species referred to in my former paper on Lepidoptera from Aden as "*A. sigillata*," the specimens being in Col. Swinhoe's collection: the two species are nearly allied, but *A. sigillata* is a small (probably dry-season) form of *A. natalensis*, and shows black spots and no parallel brown bars on the under surface of the disc of secondaries; whereas in *A. gamra* the brown bars replace the extra black spots.

9. *LYCÆNESTHES AMARAH*.

*Polyommatus amarah*, Lefebvre, Voy. Abyss. vi. p. 384, pl. ii. figs. 5, 6 (1847).

♂, Shaik Othman, 24th February, 1895 (*Col. Yerbury*).

The stronger form of wing and the two pencils of elongated scales from the fringe of secondaries show this to be a *Lyccenesthes* and not an *Azanus*; the pattern of the under surface is deceptively similar in the two genera.

10. *ZIZERA GAIKA*.

*Lyccæna galka*, Trimen, Trans. Ent. Soc. ser. 3, vol. i. p. 403 (1862).

♂, Aden, 19th February, 1895 (*Col. Yerbury*).

11. *HYREUS LINGEUS*.

*Papilio lingeus*, Cramer, Pap. Exot. iv. pl. cccclxxix. F, G (1782).

♀, Shaik Othman, 1st April, 1895 (*Col. Yerbury*).

12. *ZESIUS LIVIA*.

*Lycæna livia*, Klug, Symb. Phys. pl. 40. figs. 3-6 (1834).

♂ ♀, Shaik Othman, 24th February; ♂, Aden, bred from seed-pods of *Acacia edgworthii*, 4th March; ♂ ♀, Lahej, 12th March; ♀, Shaik Othman, 5th April, 1895 (*Col. Yerbury*).

13. *CHLOROSELAS ESMERALDA*.

*Chloroselas esmeralda*, Butler, P. Z. S. 1885, p. 765, pl. xlvii. fig. 4.

♂; Zaila, Somaliland, 23rd May, 1895 (*Capt. Nurse*).

Mr. Trimen, 'South-African Butterflies,' vol. iii. p. 414, observes:—"On careful comparison of two males taken by Mr. Selous—which quite agree with Mr. Butler's description of *C. esmeralda*—and of three very fine males taken near Durban by Mr. Millar, with the type of *A. pseudozeritis*, I have come to the conclusion that *esmeralda* is identical with *pseudozeritis*." He then proceeds to point out that his type and specimens from Durban are darker below than the others, have a fuscous cloud on the middle disc of the hind wings, the silvery spots very brilliant, and "There are two linear tails on the hind wing, respectively on the first median nervule and the submedian nervure." This, to my mind, settles the question: the Somali examples only have one tail; they are uniformly of a buffish stone-colour below without any clouding. I examined an example, presumably of *C. pseudozeritis*, about a year ago, and decided that it was undoubtedly distinct.

14. *IOLAUS NURSEI*, sp. n. (Plate X. fig. 16.)

Closely allied to *I. umbrosa* (P. Z. S. 1885, p. 766, pl. xlvii. fig. 6), but the wings above bright cobalt-blue, with two whitish superposed spots on the disc of the primaries, close to the slaty-black outer border; the fringe much whiter, pure white towards external angle: secondaries above with two or three ill-defined white discal spots parallel to outer margin; the outer border pure white, bounded internally by a dusky stripe, including the ordinary black spots, and externally by a sharply-defined black line; fringe pure white with a greyish line: wings below pearly white, the pattern nearly identical with that of *I. umbrosa*, but the bands black-brown instead of red: other differences which exist may be variable and therefore not worth noting. Expanse of wings 35-40 millim.

♂ ♂, Shaik Othman, 3rd March and 3rd April, 1895 (*Col. Yerbury*); ♂, 26th February, ♂ ♀, 31st March (*Capt. Nurse*).

This is doubtless the Arabian representative of the Somali *I. umbrosa*; but it is a far prettier insect.

15. *IOLAUS GLAUCUS*.

*Iolauus glaucus*, Butler, P. Z. S. 1885, p. 766.

♂ ♀, Zaila, Somaliland, 23rd and 28th May, 1895 (*Capt. Nurse*).

16. *TERACOLUS CALAIS*, var. *DYNAMENE*.

*Pontia dynamene*, Klug, Symb. Phys. pl. vi. figs. 15, 16 (1829).

♀, Aden, 8th March, 1895; ♂ ♀, 8th and 12th May, 3rd and 7th June, 1894 (*Capt. Nurse*).

17. *TERACOLUS PHISADIA*, var. *ARNE*. (Plate X. fig. 13.)

*Pontia arne*, Klug, Symb. Phys. pl. 7. figs. 1-4 (1829).

♀ ♀, 12th February; Lahej, 6th March; Haithalhim, 23rd March, 1895 (*Col. Yerbury*).

In my paper on Lepidoptera from Somaliland (P. Z. S. 1885), when describing *T. ocellatus*, a species the existence of which I had previously suspected, I observed, "I have also no doubt that a species intermediate between *T. phisadia* and *T. vestalis* will ere long be discovered." In Staudinger's 'Exotische Schmetterlinge' an African species was subsequently described and figured under the name of *Idnuis castalis*, which scarcely differs from the Indian *I. vestalis*, and which, as I have since discovered, exhibits similar slight variations.

In my paper on Lepidoptera from Aden (P. Z. S. 1884, p. 478) I pointed out that several species of Butterflies presented simple variations, which had become fixed as local races in various parts of Africa and Asia; and it struck me that in the case of *T. phisadia*, the female of which is extremely variable, we might still expect to find evidence of its derivation from a black and white type similar to those of India; I therefore asked Col. Yerbury to look out for females of *T. phisadia* having this character. In this he was perfectly successful, the two females obtained at Lahej and Haithalhim being indistinguishable from females of *Teracolus ochreipennis* (a species only doubtfully distinct from *T. vestalis*). In this species, therefore, we still have evidence of descent from the black and white forms of India.

18. *TERACOLUS VI*.

*Teracolus vi*, Swinhoe, P. Z. S. 1884, p. 435, pl. xxxix. figs. 6, 7.

♂, Aden, 20th February, 1895 (*Col. Yerbury*).

19. *TERACOLUS CHRYSONOME*.

*Pontia chrysonome*, Klug, Symb. Phys. pl. 7. figs. 9-11 (1829).

♀, Zaila, Somaliland, 28th May, 1895 (*Capt. Nurse*).

20. *TERACOLUS HELIOCAUSTUS*.

*Teracolus heliocaustus*, Butler, P. Z. S. 1885, p. 768, pl. xlvii. figs. 8, 9.

♀, Zaila, Somaliland, 6th June, 1895 (*Capt. Nurse*).

A much faded example.

## 21. TERACOLUS LEO.

*Anthocharis leo*, Butler, Ann. & Mag. Nat. Hist. ser. 3, vol. xvi. p. 397 (1865).

♂, Zaila, Somaliland, 4th June (*Capt. Nurse*).

This is the form found at Kilimanjaro, where it is fairly common; it is very constant in all the characters which distinguish it from *T. acaste*.

## 22. TERACOLUS HALIMEDE. (Plate X. fig. 17.)

♂ ♀. *Pontia halimede*, Klug, Symb. Phys. pl. 7. figs. 12-15 (1829).

Var. ♀. *Pontia acaste*, Klug, l. c. figs. 16, 17 (1829).

Var. ♂ ♀. *Teracolus caelestis*, Swinhoe, P. Z. S. 1884, p. 435, pl. xxxix. figs. 1, 2.

♂, Lahej, 9th March (*Col. Yerbury*), 22nd May; ♀, 23rd May, 1895 (*Capt. Nurse*).

This heavily-marked form of the species seems to be very rare near Aden, the common types there being vars. *acaste* and *caelestis* with intergrades.

Var. *acaste*.

♀, Aden, 21st March, 17th April; ♂, 23rd April; ♀, 9th May; ♂ ♀, 5th June, 1895 (*Capt. Nurse*).

Var. *caelestis*.

♀, Aden, 20th January, 1st and 6th February, 5th April; ♂, 26th April; ♂ ♂, 8th May; ♀, 5th June, 1895; ♀ ♀, 13th July and 25th October, 1894.

## 23. TERACOLUS EUPOMPE.

*Pontia eupompe*, Klug, Symb. Phys. pl. 6. figs. 11-14 (1829).

♂ ♂, ♀ ♀, Zaila, Somaliland, 21st, 23rd, and 28th May, 1895 (*Capt. Nurse*).

Var. ? *T. dedecora*, Felder, Reise der Nov., Lep. ii. p. 184 (1865).

♂, Zaila, Somaliland, 18th June, 1895 (*Capt. Nurse*).

## 24. TERACOLUS PHILLIPSI.

*Teracolus phillipsi*, Butler, P. Z. S. 1885, p. 772, pl. xlvii. fig. 11, ♀.

♂, Somaliland (*Capt. Nurse*).

## 25. TERACOLUS EVAGORE.

♀ (as ♂). *Pontia evagore*, Klug, Symb. Phys. pl. 8. figs. 5, 6 (1829).

♂. *Anthocharis nouna*, Lucas, Expl. Alg., Zool. iii. p. 350, pl. 1. fig. 2 (1849).

♂. *Anthopsyche heuglini*, Felder, Wien. ent. Monatschr. iii. p. 272 (1859); Reise der Nov., Lep. ii. p. 185, pl. xxv. fig. 4 (1865).

♂ ♀. *Teracolus saxeus*, Swinhoe, P. Z. S. 1884, p. 441, pl. xl. figs. 1, 2.

♂ ♀. Lahej, 21st and 23rd May and 13th December, 1894, 17th February, 6th and 8th May, 1895; Shaik Othman, 21st April; bred specimen, Aden, 31st March, 1895; Zaila, Somaliland, 21st May, 1895 (*Capt. Nurse*).

Capt. Nurse's specimens seem completely to link the following to *T. evagore*, which appears to be an extreme female development of the species.

Var. *Teracolus jamesi*, Butler, P. Z. S. 1885, p. 771.

♀ ♀, Zaila, Somaliland, 4th, 11th, and 21st May, 1895 (*Capt. Nurse*).

## 26. TERACOLUS COMPTUS.

*Teracolus comptus*, Butler, P. Z. S. 1888, p. 94.

♂, Zaila, Somaliland, April 1895 (*Capt. Nurse*).

Described from specimens obtained at Kilimanjaro.

## 27. TERACOLUS YERBURI. (Plate X. fig. 14.)

*Teracolus yerburi*, Swinhoe, P. Z. S. 1884, p. 441, pl. xxxix. fig. 12.

Var. *Teracolus swinhoei*, Butler, P. Z. S. 1884, p. 491.

Shaik Othman, 24th and 26th February and 3rd March, 1895 (*Col. Yerbury*); 15th April, 1894; 21st and 28th April, 1895; 6th and 13th May, 3rd and 10th June, 1894; Lahej, 23rd and 24th May, 1894; Aden, bred 30th April, 1895 (*Capt. Nurse*); 25th February and 8th March, 1895 (*Col. Yerbury*).

Capt. Nurse also has a specimen bred at Aden on the 19th March, 1895, from larva found at Shaik Othman, and Col. Yerbury seven examples, all of which emerged either on the 11th or 12th April.

## 28. TERACOLUS DAIRA.

*Pontia दौरा*, Klug, Symb. Phys. pl. 8. figs. 1-4 (1829).

♂ ♂, ♀ ♀, Zaila, Somaliland, 21st and 28th May, 4th June, 1895 (*Capt. Nurse*).

## 29. TERACOLUS ANTEVIPPE.

*Anthocharis antevippe*, Boisduval, Sp. Gén. Lép. i. p. 572, pl. 18. fig. 3 (1836).

♂, Somaliland (*Capt. Nurse*).

## 30. CATOPSILIA FLORELLA.

♀. *Papilio florella*, Fabricius, Syst. Ent. p. 479 (1775); ♂ ♀. Butler, Lep. Exot. p. 56, pl. xxii. figs. 1, 2, 2a (1871).

Var. *Colias pyrene*, Swainson, Zool. Ill. 1st ser. pl. 51 (1820-1).

Var. *Callidryas hyblæa*, Boisduval, Sp. Gén. Lép. p. 612 (1836).



Var. *Catopsilia aleurona*, Butler, Ann. & Mag. Nat. Hist. ser. 4, vol. xviii. p. 489 (1876).

a. *C. florella*, typical, Shaik Othman, ♀, 21st October, 1894; ♀, Aden, 15th, 25th, and 26th March, 1895; ♂, 25th October, 1894.

b. *C. aleurona*, ♂ ♀, Shaik Othman, 3rd February, 1895; Zaila, Somaliland, 22nd and 23rd May, 1895.

c. *C. hyblæa*, ♀, Aden, 21st March, 1895.

d. *C. pyrene*, ♀, Aden, 19th March, 1895; ♂, 18th May, 1894; ♂ ♀, Lahej, 13th and 23rd March, 8th May, 1895; ♂, Zaila, Somaliland, April, 1895.

All these specimens were collected by Capt. Nurse.

### 31. BELENOIS MESENTINA, var. LORDACA.

*Pieris lordaca*, Walker, Entom. v. p. 48.

♀, Zaila, Somaliland, April 1895 (*Capt. Nurse*).

### 32. HERPÆNIA ITERATA.

♂. *Herpænia iterata*, Butler, P. Z. S. 1888, p. 96.

♀, Somaliland (*Capt. Nurse*).

### 33. PAPILIO DEMOLEUS.

*Papilio demoleus*, Linneus, Mus. Lud. Ulr. p. 214 (1764).

Lahej, 3rd, 5th, 6th, and 29th March, 1895 (*Col. Ferbury*); Somaliland (*Capt. Nurse*).

The Arabian examples are slightly aberrant, the band on primaries more broken up than usual, and the under surface of the secondaries greyer; these differences are, however, variable.

### 34. GEGENES KARSANA.

*Hesperia karsana*, Moore, P. Z. S. 1874, p. 576, pl. 67. fig. 6.

Shaik Othman, 2nd April, 1895 (*Col. Ferbury*).

### 35. PYRGUS ADENENSIS.

*Pyrgus evanidus*, var. *adenensis*, Butler, P. Z. S. 1884, p. 493.

Haithalhim, 25th March, 1895 (*Col. Ferbury*).

### 36. GOMALIA ELMA.

*Pyrgus elma*, Trimen, Trans. Ent. Soc. London, 3rd ser. i. p. 288 (1862); Rhop. Afr. Austr. ii. p. 291, pl. 5. fig. 8 (1866).

*Gomalia albofasciata*, Moore, P. Z. S. 1879, p. 144; Lep. Ceyl. i. p. 183, pl. 71. fig. 7 (1881).

♂ ♂, ♀, Lahej, Arabia, 22nd, 24th, and 25th May, 1894 (*Capt. Nurse*).

The two males are very dissimilar, one being very dark and small, the other larger and almost as pale as the female; this variability renders it impossible to keep *G. albofasciata* separate.